

Probabilistic Visibility Forecasting Using Bayesian Model Averaging

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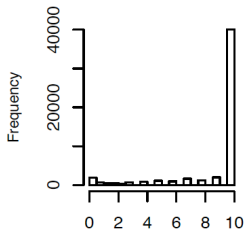
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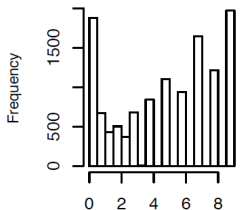
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 - a function of cloud water, rain, cloud ice, snow given by the extinction coefficients method of Stoelinga & Warner (1999)
 - clear air RUC forecast, equal to a decaying exponential function of relative humidity (Smirnova et al 2000)

Visibility Data in PNW for 2007 and 2008

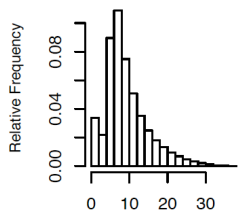
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(a)



(b)



(c)

- 77% of obs are at 10 miles

Bayesian Model Averaging

(Raftery et al 2005, MWR)

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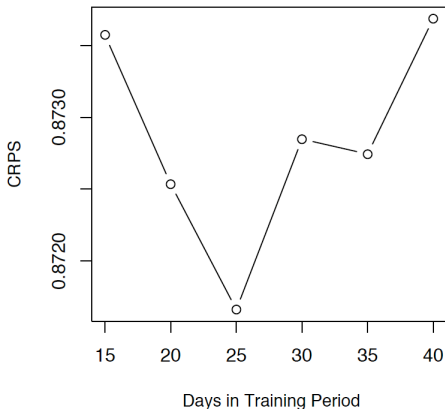
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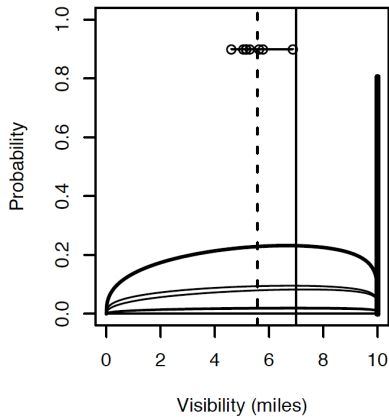


Example

Station KONP, Newport, Ore., 6 May 2008

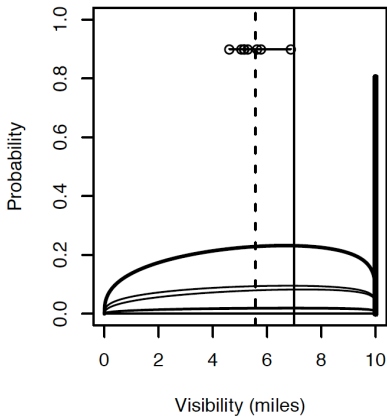
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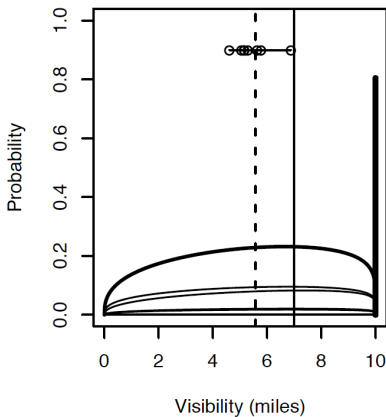
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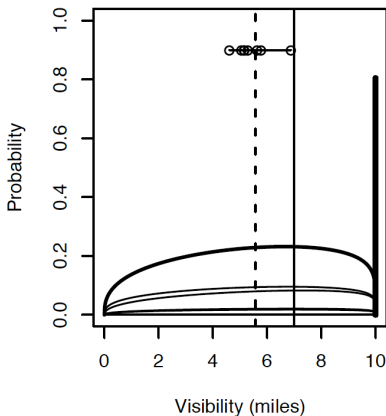
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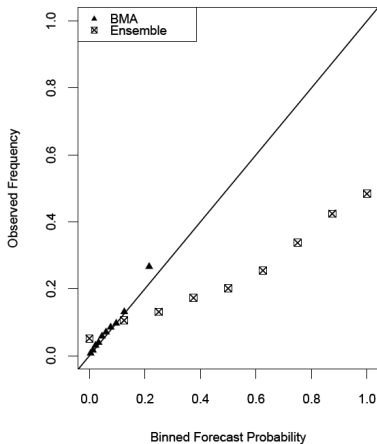
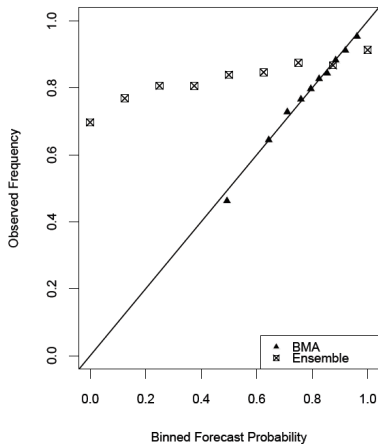
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- BMA 80% interval (dashed vertical lines): [5.6, 10] miles

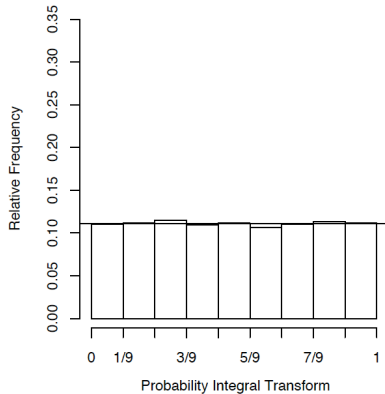
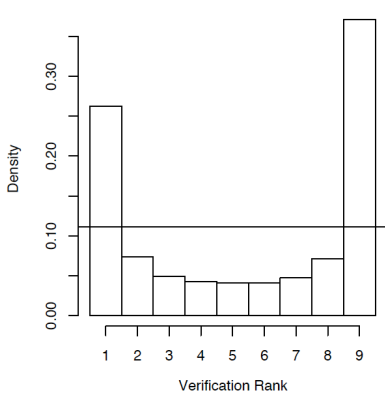
Reliability Plots for $P(y = 10)$ and $P(y \leq 3)$

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